AMENDMENTS TO THE SPECIFICATION

Page 2, before line 1, insert the following replacement paragraph:

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a division of U.S. patent application Serial No. 09/218,176 filed December 22, 1998, now U.S. Patent 6,171,584, which in turn is a continuation of U.S. patent application Serial No. 08/679,048 filed July 12, 1996, which is a continuation-in-part of U.S. patent application Serial No. 08/482,577, filed July 6 7, 1995. The disclosures of the prior applications are incorporated by reference herein in their entirety.

Page 5, fourth full paragraph onto page 6, insert the following replacement paragraph:

Figure 1 shows a comparison of the amino acid sequence of human MP121 (SEQ ID NO:7) with some members of the TGF-β family (inhibin α and β chains) (SEQ ID NOS:8-10) starting at the first of the seven conserved cysteine residues. * denotes that the amino acid is the same in all compared proteins; + denotes that the amino acid corresponds in at least one of the proteins compared to ~~humna~~ human MP121.

Page 6, second full paragraph, insert the following replacement paragraph:

Figure 3 shows a diagram of a Western blot using chicken antibodies against human MP121. Lane 1 shows *E. coli* cells transformed with pBP4MP121His under reducing conditions (1% β-mercaptoethanol). Lane 2 shows cell culture supernatant of NIH-3T3 cells after infection with recombinant viruses (with inserted MP121 cDNA) under reducing conditions (1% β-mercaptoethanol). Lane 3 shows cell culture supernatant of NIH-3T3 cells after infection with recombinant viruses (with inserted MP121 cDNA) under non-reducing conditions. Lane M shows

prestained protein molecular weight markers having the stated apparent molecular weights (Gibco BRL #26041-020).

Page 6, third full paragraph, insert the following replacement paragraph:

Figure 4 shows the expression of MP121 compared to activin β_A and β_B in various mouse tissues and is an autoradiogram after gel analysis of an RNase protection assay using specific probes against activin βA (βA), activin βB (βB), MP121 and against GAPDH for the control. Total RNA was tested which has been isolated from various mouse tissues (Lane 1: brain; Lane 2: heart, Lane 3: kidney, Lane 4: liver, Lane 5: lung, Lane 6: muscle, Lane 9: ovary, Lane 10: spleen, Lane 11: testes) from embryonic stem cells (Lane 12: CJ7) and from yeast (Lane 13) as a control. No RNA was used in Lane 14 as a control. The unprotected antisense RNA probes used for the hybridization are applied in lanes 8 and 15 and the expected fragment size is indicated in brackets in the right margin. The bands of the protected fragments are labeled in the left margin. PBR322 restricted with ~~Map~~ Msp 1 (Biolabs #303) and end-labeled with γ-32p-ATP (Amersham) was used as the marker (Lane 7).

Page 24, line 12 to page 25, line 30, insert the following replacement paragraph:

As an example, the mature part of human MP121 (amino acid 237 to 352 in SEQ ID NO:2) with an additional 13 amino acids, including six histidines at the N-terminus, (MHHHHHHKLEFAM) (SEQ ID NO:40) was expressed in the prokaryotic vector pBP4. This vector is a pBR322 derivative having ~~tetracyclin~~ tetracycline resistance which, in addition, contains the T7 promoter from the pBluescript II SK plasmid (Stratagene). Furthermore, the vector contains a ribosomal binding site following the T7 promoter and a start codon followed by six codons for histidine. A terminator (TØ) follows after several single restriction cleavage sites such as EcoRI, XhoI, SmaI and ApaI, for the insertion of inserts as well as stop codons in all three reading frames.

In order to obtain the cDNA for the mature part of MP121, PCR was carried out on the plasmid SK121L9.1 (DSM ~~dispositary~~ depository number: 9177) using the two oligonuleotides GAATTCGCCATGGGCATCGACTGCCAAGGAGG (SEQ ID NO:41) and CCGCTCGAGAAGCTTCAACTGCACCCACAGGC (SEQ ID NO:42). Both oligonucleotides contain additional restriction cleavage sites at their ends (EcoRI and NcoI or XhoI and HindIII). In an intermediate step the resulting 377 bp fragment was cloned with blunt ends into the pBluescript II SK vector (~~Stragene~~ Stratagene) that had been cleaved with EcoRV. One clone in the orientation of the 5' end of MP121 towards the T7 promoter was cleaved with EcoRI and the resulting insert (0.38 kb) was cloned into the pBP4 vector that had also been cleaved with EcoRI. The correct orientation of the insert in the resulting plasmid pBP4MP121His was established by restriction analysis and sequencing. The plasmid pBR4MP121His was deposited on 30.1.1995 at the DSM (~~depositary~~ depository number: 9704). The expression of MP121 protein can be achieved by simultaneously providing T7 RNA polymerase. T7 RNA polymerase can be provided by various methods such as, e.g., by a second plasmid with a gene for T7 RNA polymerase or by infection with phages which code for T7 RNA polymerase or also by special bacterial strains which have integrated the gene for T7 RNA polymerase. The mature MP121 protein with a His-tag (MP121His) is produced in inclusion bodies by using the bacterial strain BL21 (DE3)pLysS (Novagen, #69451-1) and inducing the T7 RNA polymerase expression with IPTG according to the manufacturer's instructions. In SDS polyacrylamide gels (15%) the protein exhibits an apparent molecular weight of nearly 16 kD (theoretical molecular weight: 14.2 kD) as is shown representatively in the Western blot of Fig. 3. The bacteria transformed with pBP4 as controls do not show any staining of specific bands. Due to the His-tag this protein can be purified on nickel-chelating agent columns as described, for example, by Hochuli et al., (Bio/Technology, Vol. 6, 1321-1325 (1988)). An additional purification is possible by means of reversed phase HPLC. A reversed phase column (Nucleosil 300-7C4 from Macherey-Nagel, Type 715023) was used with a flow-rate of 2 ml/min and an acetonitrile gradient in 0.1% TFA of 0 to 90% within 100 minutes. MP121His elutes under these conditions after ca. 40% acetonitrile.

Page 28, lines 19-33, insert the following replacement paragraph:

PCR reactions and intermediate cloning were necessary in order to shorten the 5' and 3' untranslated regions of the initial plasmid SK121L9.1 (DSM, depositary number: 9177) and to insert single restriction cleavage sites at the ends. All PCR reactions were carried out using the plasmid SK121L9.1 (DSM depositary number: 9177). In order to shorten the 5' untranslated end, the primer CCCGGATCCGCTAGCACCATGACCTCCTCATTGCTTCTG (SEQ ID NO:44) with an inserted BamHI and NheI restriction cleavage site was used in a PCR with an internal primer (CCCTGTTGTCCTCTAGAAGTG) (SEQ ID NO:45). In an intermediate step, the fragment obtained was cloned into Bluescript SK (Stratagene), sequenced and checked for concurrence with the sequence shown in SEQ ID NO:1. The SphI/EcoRI fragment (0.22 kb) from the plasmid ~~pBR4MP121His~~ pBP4MP121His was used to shorten the 3' untranslated end.

Page 32, lines 7-22, insert the following replacement paragraph:

Total RNA from various tissues (brain, heart, kidney, liver, lung, spleen, muscle, ovary, testes) was isolated according to standard methods from six-week-old mice as well as from embryonic stem cells. 10 µg total RNA was used in each case in a RNAse protection assay (RPA) from Ambion (RPA II kit, #1410) according to the manufacturer's instructions. In order to obtain specific probes for activin β_A and activin β_B the genomic DNA from the mouse (129Sv) was amplified from the mature part of the proteins using corresponding specific primers. In order to facilitate cloning, EcoRI and/or BamHI or HindIII restriction cleavage sites were introduced, respectively, at the ends of the primers. In the case of activin β_A the primers were derived from mRNA from rats (GenBank Accession #M37482):

~~GGATCCGAATTCGGCTTGGAGTGTATGGCAAGG~~

GGATCCGAATTCGGCTTGGAGTGTGATGGCAAGG (SEQ ID NO:46)

and GGATCCGAATTCCTCTGGGACCTGGCAACTCTAG (SEQ ID NO:47).